AMENDMENT

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A method for extracting nucleic acid from a liquid mixture containing nucleic acid, the liquid mixture comprising a biological or a biochemical sample, the method comprising (a) providing a container having a first and second end and containing a solid phase capable of binding nucleic acid and a reversible suction means connected to one of said ends; and (b) operating said reversible suction means to draw the liquid mixture through the solid phase in one direction and forcing the liquid mixture over the solid phase in the reverse direction, so that nucleic acid in the sample binds to the solid phase.
2. (Original) The method of claim 1, wherein the nucleic acid is DNA or RNA, or a mixture of both.
3. (Previously presented) The method of claim 1, wherein the container has a volume less than or equal to 100 ml.
4. (Previously presented) The method of claim 1, further comprising the step of expelling the liquid mixture from the container after extraction of nucleic acids.
5. (Previously presented) The method of claim 1, further comprising washing the solid phase to remove bound materials other than nucleic acid.
6. (Previously presented) The method of claim 1, further comprising removing the nucleic acids from the solid phase by eluting with a solvent.
7. (Previously presented) The method of claim 1, further comprising reversibly drawing a second liquid mixture over the solid phase so that nucleic acid in the second liquid mixture binds to the solid phase.
8. (Previously presented) The method of claim 1, further comprising homogenizing the liquid mixture prior to drawing the liquid mixture over the solid phase.

9. (Previously presented) The method of claim 1, wherein the reversible suction means is a syringe.

10. (Previously presented) The method of claim 1, wherein the container is a disposable cartridge.

11. (Previously presented) The method of claim 1, wherein a syringe is the container and reversible suction means and the solid phase is contained in the barrel of the syringe.

12. (Previously presented) The method of claim 1, wherein the container is a pipette and the solid phase is located in the tip of the pipette.

13. (Previously presented) The method of claim 1, wherein the container is an extraction cartridge.

14. (Previously presented) The method of claim 1, wherein the solid phase can move inside the container.

15. (Previously presented) The method of claim 1, wherein the container and reversible suction means are releasably connected.

16. (Previously presented) The method of claim 1, wherein the solid phase comprises porous or non-porous beads.

17. (Previously presented) The method of claim 1, wherein the solid phase comprises polymeric material having surface groups which are pyrazole, pyrole, pyrrolidine, indole, pyrimidine, nucleic acid bases, imidazole, imines, amines, lysines or a group having a pKa in the range of 3 to 12.

18. (Previously presented) The method of claim 16, wherein the beads are derivatised so that they are capable of selectively binding nucleic acid.

19. (Previously presented) The method of claim 16, wherein the beads are retained in the container by a frit, porous membrane or mesh.

20. (Original) The method of claim 19, wherein the frit, porous membrane or mesh has a pore diameter of at least 0.1 mm.

21. (Previously presented) The method of claim 1, wherein the container has an inner surface having ridges or spirals to cause mixing between liquid mixture and solid phase.

22. (Previously presented) The method of claim 1, wherein the solid phase comprises one or more spaced apart discs or membranes, each having holes with a diameter of at least 0.1mm, or cut away sections.

23. (Previously presented) The method of claim 1, wherein a by-pass channel runs through the solid phase.

24. (Previously presented) The method of claim 1, wherein the solid phase has a pore size of greater than 0.1mm.

25. (Previously presented) A method for extracting nucleic acid from a liquid mixture containing nucleic acid, the liquid mixture comprising a biological or a biochemical sample, the method employing (a) a container comprising an electrode capable of binding nucleic acid and (b) reversible suction means for drawing the liquid mixture over the solid phase, the method comprising reversibly drawing the liquid mixture over the electrode so that nucleic acid in the sample binds to the electrode surface.

26. (Previously presented) An extraction device for extracting nucleic acid from a liquid mixture containing nucleic acid, the liquid mixture comprising a biological or a biochemical sample, the device comprising (a) a container having first and second ends and containing a solid phase capable of binding nucleic acid and (b) reversible suction means which is connected to one of said ends and operates to draw the liquid mixture through said solid phase in one direction and force said liquid through said solid phase in the reverse direction, thereby causing said liquid mixture to pass up and down through said solid phase.

27. (Previously presented) The extraction device of claim 26, wherein the container has a volume less than or equal to 100 ml and the solid phase is located within the barrel of the syringe.

28. (Previously presented) The extraction device of claim 26, wherein the reversible suction means is a syringe and the solid phase is located in a cartridge releasably connected to the nozzle of the syringe.

29. (Previously presented) The extraction device of claim 26, wherein the container is a pipette and the solid phase is located within the tip of the pipette.

30. (Original) The extraction device of claim 29, wherein an aerosol plug is located in the body of the pipette.

31. (Previously presented) An extraction device for simultaneously extracting nucleic acids from two or more liquid mixtures containing nucleic acids, the liquid mixture comprising a biological or a biochemical sample, comprising (a) two or more containers each

containing a solid phase capable of binding nucleic acid and (b) reversible suction means which may be applied simultaneously to each container to reversibly draw a liquid mixture over the solid phase.

32. (Previously presented) The method of claim 1, wherein the solid phase has surface groups having a pKa such that the electrostatic charge of the solid phase and its capability of binding nucleic acid varies with pH.

33. (Previously presented) A method for extracting nucleic acid from a liquid mixture containing nucleic acid, the liquid mixture comprising a biological or a biochemical sample, the method comprising (a) providing a container having a first and second end and containing a solid phase capable of binding nucleic acid and a reversible suction means connected to one of said ends, wherein the container is a pipette and the solid phase is located in the tip of the pipette; and (b) operating said reversible suction means to draw the liquid mixture through the solid phase in one direction and forcing the liquid mixture through the solid phase in the reverse direction, so that nucleic acid in the sample binds to the solid phase.

34. (Previously presented) A method for extracting nucleic acid from a liquid mixture containing nucleic acid, the liquid mixture comprising a biological or a biochemical sample, the method comprising (a) providing a container having a first and second end and containing a solid phase capable of binding nucleic acid and a reversible suction means releasably connected to one of said ends, wherein the container is an extraction cartridge; and (b) operating said reversible suction means to draw the liquid mixture through the solid phase in one direction and forcing the liquid mixture through the solid phase in the reverse direction, so that nucleic acid in the sample binds to the solid phase.

35. (Previously presented) A method for extracting nucleic acid from a liquid mixture containing nucleic acid, the liquid mixture comprising a biological or a biochemical sample, the method comprising (a) providing a container having a first and second end and containing a solid phase capable of binding nucleic acid and a reversible suction means releasably connected to one of said ends, wherein the container is an extraction cartridge having an inner surface having ridges or spirals to cause mixing between the liquid mixture and the solid phase; and (b) operating said reversible suction means to draw the liquid mixture through the solid phase in one direction and forcing the liquid

mixture through the solid phase in the reverse direction, so that nucleic acid in the sample binds to the solid phase.

36. (Previously presented) A method for extracting nucleic acid from a liquid mixture containing nucleic acid, the liquid mixture comprising a biological or a biochemical sample, the method comprising (a) providing a container having a first and second end and containing a solid phase capable of binding nucleic acid and a reversible suction means connected to one of said ends, wherein the solid phase has surface groups having a pKa such that the electrostatic charge of the solid phase and its capability of binding nucleic acid varies with pH; and (b) operating said reversible suction means to draw the liquid mixture through the solid phase in one direction and forcing the liquid mixture through the solid phase in the reverse direction, so that nucleic acid in the sample binds to the solid phase.

37. (Previously presented) A method for extracting nucleic acid from a liquid mixture containing nucleic acid, the liquid mixture comprising a biological or a biochemical sample, the method comprising (a) providing a container having a first and second end and containing a solid phase capable of binding nucleic acid and a reversible suction means connected to one of said ends, wherein the solid phase comprises a porous plug, wadding, frit, membrane or mesh; and (b) operating said reversible suction means to draw the liquid mixture through the solid phase in one direction and forcing the liquid mixture through the solid phase in the reverse direction, so that nucleic acid in the sample binds to the solid phase.

38. (Previously presented) An extraction device for extracting nucleic acid from a liquid mixture containing nucleic acid, the liquid mixture comprising a biological or a biochemical sample, the device comprising (a) a container having first and second ends and containing a solid phase capable of binding nucleic acid and (b) reversible suction means which is connected to one of said ends and operates to draw the liquid mixture through said solid phase in one direction and force said liquid through said solid phase in the reverse direction, thereby causing said liquid mixture to pass up and down through said solid phase, wherein the reversible suction means is a syringe, the solid phase is located in a cartridge that is releasably connected to the nozzle of the syringe, and the

solid phase has surface groups having a pKa such that the electrostatic charge of the solid phase and its capability of binding nucleic acid varies with pH.

39. (Previously presented) An extraction device for extracting nucleic acid from a liquid mixture containing nucleic acid, the liquid mixture comprising a biological or a biochemical sample, the device comprising (a) a container having first and second ends and containing a solid phase capable of binding nucleic acid and (b) reversible suction means which is connected to one of said ends and operates to draw the liquid mixture through said solid phase in one direction and force said liquid through said solid phase in the reverse direction, thereby causing said liquid mixture to pass up and down through said solid phase, wherein the container is a pipette, the solid phase is located within the tip of the pipette, and the solid phase has surface groups having a pKa such that the electrostatic charge of the solid phase and its capability of binding nucleic acid varies with pH.